WHAT IS CLAIMED:

1. An amphiphilic module, comprising:

3 – 24 synthons independently selected from the group consisting of aryl, heteroaryl, alicyclic and heteroalicyclic, provided at least one of the synthons is different from the others, wherein:

a first synthon is bonded to a second synthon through a linker;

the second synthon is bonded to a third synthon through a second linker;

the third synthon is bonded to a fourth synthon, if four synthons are desired in the module, the fourth to a fifth, etc., until an n^{th} synthon is bonded to its predecessor through an $(n - 1)^{th}$ linker where n is 4 - 24; and,

the n^{th} synthon is bonded to the first synthon through an n^{th} linker to form a closed ring of synthons;

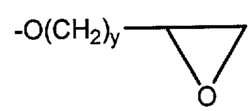
1 or more lipophilic moieties bonded to one or more of the synthons; and,

1 or more hydrophilic moieties bonded to one or more of the synthons.

2. The amphiphilic module of claim 1, wherein each synthon is independently selected from the group consisting of benzene, naphthalene, anthracene, phenylene, phenathracene, pyrene, triphenylene, phenanthrene, pyridine, pyrimidine, pyridazine, biphenyl, bipyridyl, cyclohexane, cyclohexene, decaline, piperidine, pyrrolidine, tetrahydropyran, tetranhydrothiane, 1,3-dioxane, 1,3-dithiane, 1,3-diazane, tetrahydrothiophene, tetrahydrofuran, pyrrole, cyclopentane, triptycene, adamantane, bicyclo[2.2.1]heptane, bicyclo[2.2.1]heptene, 7-azabicyclo[2.2.1]heptane, 1,3-diazabicyclo[2.2.1]heptane, bicyclo[2.2.2]octane, bicyclo[2.2.2]octene,

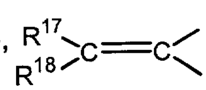
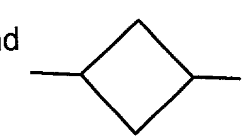
bicyclo[3.3.0]octane, bicyclo[3.3.1]nonane, bicyclo[3.3.1]nonene, bicyclo[4.2.2]decane or bicyclo[4.2.2]decene.

3. The amphiphilic module of claim 1, wherein the lipophilic moiety is selected from the group consisting of -(8C – 28C)alkyl, -O(8C – 28C)alkyl, -NH(8C - 28C)alkyl, -OC(O)-(8C – 28C)alkyl, -C(O)O-(8C – 28C)alkyl, -NHC(O)-(8C –28C)alkyl, -C(O)NH-(8C - 28C)alkyl, -CH=CH-(8C – 28C)alkyl and -C≡C-(8C – 28C)alkyl, wherein the carbon atoms of the (8C – 28C)alkyl group may be interrupted by one or more –S-, double bond, triple bond or –SiR'R"- groups, substituted with one or more fluorine atoms or any combination of these; R' and R" independently comprise (1C – 18C)alkyl.

4. The amphiphilic module of claim 1, wherein the hydrophilic moiety is selected from the group consisting of –OH, $-OCH_3$, $-NH_2$, -C≡N, $-NO_2$, $-^{+}NRR'R''$, $-SO_3^-$, $-OPO_2^{2-}$, $-OC(O)CH=CH_2$, $-SO_2NH_2$, SO_2NRR', $-OP(O)(OCH_2CH_2N^{+}RR'R'')O^-$, -C(O)OH, $-C(O)O^-$, guanidinium, aminate, pyridinium, $-C(O)OCH_3$, $-C(O)OCH_2CH_3$, $-C(O)OCH=CH_2$, $-O(CH_2)_yC(O)NH_2$, $–O(CH_2CH_2O)_zR'''$ and  ;

wherein

R, R' and R" are independently selected from the group consisting of hydrogen and (1C – 4C)alkyl, R''' is selected from the group consisting of hydrogen, $-CH_2C(O)OH$ and $-CH_2C(O)NH_2$ wherein y is1 - 6 and z is 1 - 50.

5. The amphiphilic module of claim 1, wherein each linker is independently selected from the group consisting of -O-, -S-, $-NR^{17}-$, -SS-, $-(CR^{17}R^{18})_m-$, -CH(OH)-, $-C(OH)R^{17}-CH_2NR^{18}-$, $-C(OH)CH(NHR^{17})-$, $-CR^{17}=CR^{18}-$, -C≡C-, -C(O)O-, -C(O)S-, -OC(O)O-, $C(O)NR^{17}-$, $-CR^{17}=N-$, $-CR^{17}=NNH-$, -NHC(O)O-, $-NHC(O)NR^{17}-$, $-CH(OH)CH_2(CO_2R^{17})-$, $-CH=CR^{17}C(O)-$, -C≡C-C≡C-, $-C(CHR^{17}R^{18})S-$,  , $-C(CH(CH_3)_2)Si(CH_3)_2-$, $-C(O)CH_2(CO_2R^{17})-$, and 

wherein R^{17} and R^{18} are independently selected from the group consisting of hydrogen, (1C – 4C)alkyl and a group that confers a selected chemical or physical characteristic, or a combination thereof, on the module.

6. The amphiphilic module of claim 1, wherein every other synthon is the same; that the first, third, and if present, fifth, seventh, etc., synthons are the same and the second, and if present, the fourth, sixth, eighth, etc., synthons are the same.

7. The amphiphilic module of claim 6, wherein all the linkers are the same.

8. The amphilphilic module of claim 7, comprising 12 synthons.

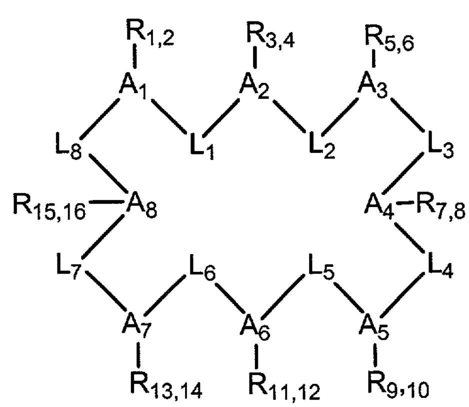
9. The amphiphilic module of claim 7, comprising 10 synthons.

10. The amphiphilic module of claim 7, comprising 8 synthons.

11. The amphiphilic module of claim 7, comprising 6 synthons.

12. The amphiphilic module of claim 7, comprising 4 synthons.

13. The amphiphilic module of claim 1, comprising the formula:



wherein:

$A_1 - A_8$ are synthons;

$L_1 - L_8$ are linkers;

one or more of R_1, R_3, R_5, R_7, R_9, R_{11}, R_{13} and R_{15} comprises a lipophilic group, which may be same as, or different from, each other;

one or more of R_2, R_4, R_6, R_8, R_{10}, R_{12}, R_{14} and R_{16} comprises a hydrophilic group, which may be the same as, or different from, each other;

each R group that is not a lipophilic or a hydrophilic group is independently either absent or comprises a group that confers a selected chemical or physical characteristic or combination thereof on the module; and,

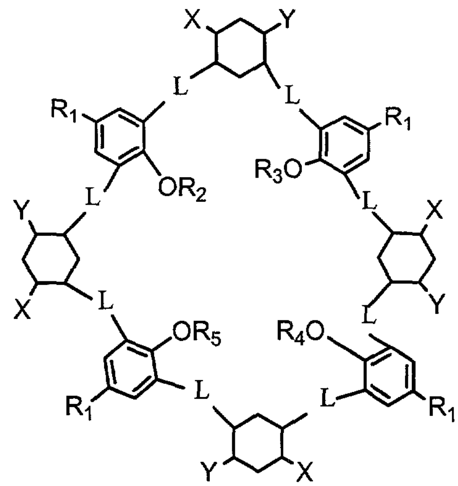
each A and each L may optionally be bonded to one or more additional substituents that confer selected chemical or physical characteristics or combinations thereof on the module.

14. The amphiphilic module of claim 13, wherein A_1, A_3, A_5 and A_7 comprise a first synthon.

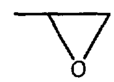
15. The amphiphilic module of claim 14, wherein A_2, A_4, A_6 and A_8 comprise a second synthon, which is different from the first synthon.

16. The amphiphilic module of claim 15, wherein all the linkers are the same.

17. An amphiphilic module, comprising the chemical structure:



wherein:

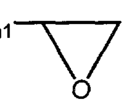
X and Y are independently hydrogen, $-OC(O)CH=CH_2$, $-NHC(O)CH=CH_2$, 

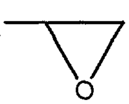
$-SH$ or $-NH_2$;

or,

X is $-C(O)OH$, $-C(O)OCH_3$, $-C(O)Cl$ or another activated acid and Y is $-NH_2$, $-OH$ or $-SH$;

R_1 is selected from the group consisting of $-CH_2$-(10C –18C)alkyl, $-CH=CH$-(10C - 18C)alkyl, $-C\equiv C$-(10C – 18C)alkyl, $-OC(O)$-(10C – 18C)alkyl, $-C(O)O$-(10C – 18C)alkyl, $-NHC(O)$-(10C - 18C)alkyl, $-C(O)NH$-(10C – 18C)alkyl and $-O$-(10C – 18C)alkyl;

one or more of R_2, R_3, R_4 and R_5 are independently selected from the group consisting of hydrogen, $-C(O)(CH_2)_2C(O)OCH_3$, $-C(O)CH=CH_2$, $-(CH_2CH_2O)_{n1}$ and

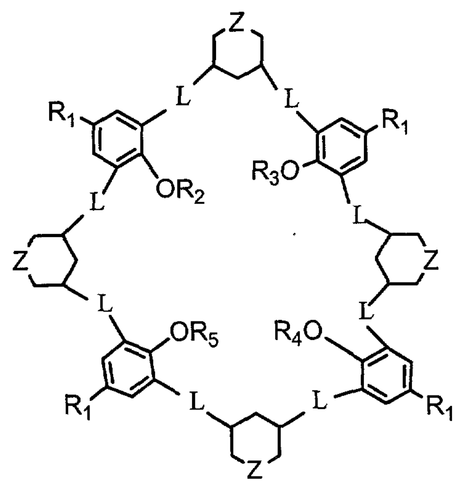
$-(CH_2)_{n2}$, wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, $-CH_2NH-$ and -CH=N-, wherein the oxygen or nitrogen is bonded to either the benzene ring or the cyclohexyl ring.

18. The amphiphilic module of claim 17, wherein the nitrogen or oxygen of the L group is bonded to the cyclohexyl group.

19. The amphiphilic module of claim 17, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the cyclohexyl ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

20. An amphiphilic module, comprising the chemical structure:



wherein:

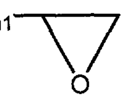
Z is $-NZ_1-$ or $-CZ_2Z_3$, wherein

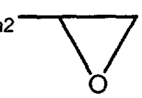
Z_1 is selected from the group consisting of hydrogen, an amino acid residue and $-C(O)CH=CH_2$;

Z_2 is hydrogen and Z_3 is selected from the group consisting of hydrogen, -OH,

$-NH_2$ and -SH, or one of Z_2 or Z_3 is selected from the group consisting of hydrogen, -OH, $-NH_2$, -SH, $-(CH_2)_{z4}OH$, $-(CH_2)_{z4}NH_2$ and $-(CH_2)_{z4}SH$ and the other is selected from the group consisting of $-(CH_2)_{z4}OH$, $-(CH_2)_{z4}NH_2$ and $-(CH_2)_{z4}SH$, wherein Z_4 is 1, 2, 3 or 4;

R_1 is selected from the group consisting of CH_2-(10C –18C)alkyl, -CH=CH-(10C - 18C)alkyl, -C≡C-(10C – 18C)alkyl, -OC(O)-(10C – 18C)alkyl, -C(O)O-(10C – 18C)alkyl, -NHC(O)-(10C - 18C)alkyl, -C(O)NH-(10C – 18C)alkyl and –O-(10C – 18C)alkyl;

one or more of R_2, R_3, R_4 and R_5 are independently selected from the group consisting of hydrogen, $–C(O)(CH_2)_2C(O)OCH_3$, $-C(O)CH=CH_2$, $-(CH_2CH_2O)_{n1}$  and

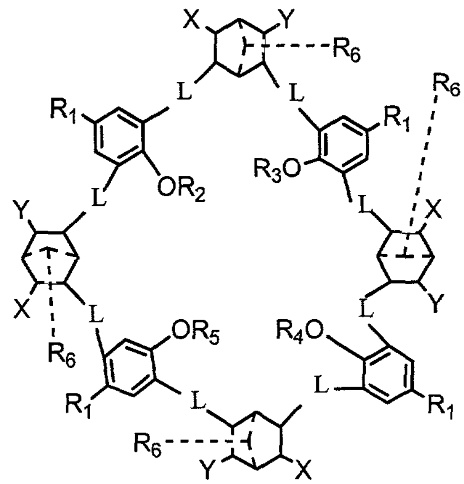
$-(CH_2)_{n2}$ , wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, $-CH_2NH-$ and –CH=N-, wherein the oxygen or nitrogen is bonded to either the benzene ring or the cyclohexane ring.

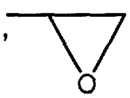
21. The amphiphilic module of claim 20, wherein the nitrogen or oxygen of the L group is bonded to the cyclohexyl ring.

22. The amphiphilic module of claim 20, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the cyclohexyl ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

23. An amphiphilic module, comprising the chemical structure:



wherein:

X and Y are independently hydrogen,  , $-OC(O)CH=CH_2$, $-NHC(O)CH=CH_2$, $-SH$ or $-NH_2$;

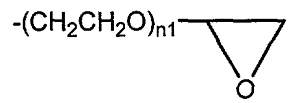
or,

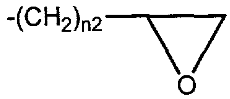
X is $-C(O)OH$, $-C(O)OCH_3$, $-C(O)Cl$ or another activated acid and Y is $-NH_2$, $-OH$ or $-SH$;

when X and Y are both hydrogen or $-C(O)OCH_3$, R_1 is selected from the group consisting of $-CH=CH_2$, $-OC(O)CH=CH_2$ and $-NHC(O)CH=CH_2$;

when X and Y are both $-SH$ or $-NH_2$ or X is $-C(O)OCH_3$ and Y is $-NH_2$, R_1 is hydrogen;

R_6 is selected from the group consisting of CH_2-(10C –18C)alkyl, $-CH=CH$-(10C - 18C)alkyl, $-C\equiv C$-(10C – 18C)alkyl, $-OC(O)$-(10C – 18C)alkyl, $-C(O)O$-(10C – 18C)alkyl, $-NHC(O)$-(10C - 18C)alkyl, $-C(O)NH$-(10C – 18C)alkyl and $-O$-(10C – 18C)alkyl;

one or more of R_2, R_3, R_4 and R_5 are independently selected from the group consisting of hydrogen, $-C(O)(CH_2)_2C(O)OCH_3$, $-C(O)CH=CH_2$,  and

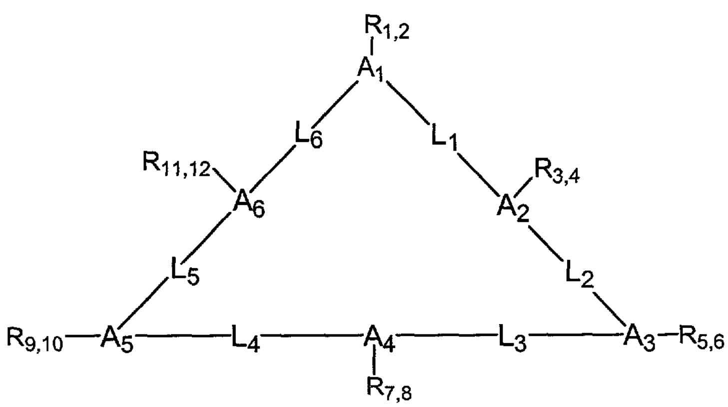
 , wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of $-C(O)O-$, $-C(O)NH-$, $-CH_2NH-$ and $-CH=N-$, wherein the oxygen or nitrogen is bonded to either the benzene ring or the bicyclo[2.2.1]heptane ring.

24. The amphiphilic module of claim 23, wherein the nitrogen or oxygen of the L group is bonded to the bicyclo[2.2.1]heptane ring.

25. The amphiphilic module of claim 23, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the bicyclo[2.2.1]heptane ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

26. The amphiphilic module of claim 1, comprising the structure:



wherein:

$A_1 - A_6$ are the synthons;

$L_1 - L_6$ are the linkers;

one or more of R_1, R_3, R_5, R_7, R_9 and R_{11} comprises a lipophilic group, which may be same as, or different from, each other;

One or more of R_2, R_4, R_6, R_8, R_{10} and R_{12} comprises a hydrophilic group, which may be the same as, or different from, each other;

each R group that is not a lipophilic or a hydrophilic group is independently either absent or comprises a group that confer a selected chemical or physical characteristic or combination thereof on the module; and,

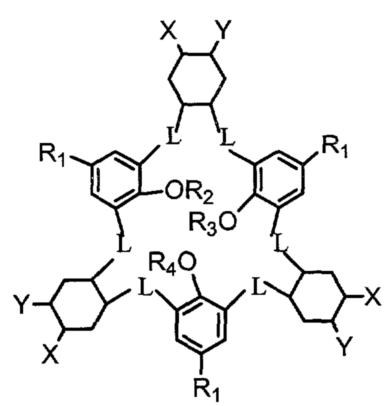
each A and each L may optionally be bonded to one or more additional substituents that confer selected chemical or physical characteristics or combinations thereof on the module.

27. The amphiphilic module of claim 26, wherein A_1, A_3 and A_5 comprise a first synthon.

28. The amphiphilic module of claim 27, wherein A_2, A_4 and A_6 comprise a second synthon, which is different from the first synthon.

29. The amphiphilic module of claim 28, wherein all the linkers are the same.

30. An amphiphilic module comprising the structure:

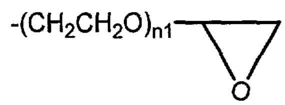


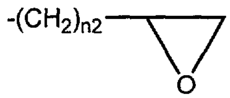
wherein:

X and Y are both $-SH$ or $-NH_2$; or,

X is $-C(O)OH$, $-C(O)OCH_3$, $-C(O)Cl$ or another activated acid and Y is $-NH_2$;

R_1 is selected from the group consisting of $-CH_2$-(10C –18C)alkyl, -CH=CH-(10C - 18C)alkyl, -C≡C-(10C – 18C)alkyl, -OC(O)-(10C – 18C)alkyl, -C(O)O-(10C – 18C)alkyl, -NHC(O)-(10C - 18C)alkyl, -C(O)NH-(10C – 18C)alkyl and –O-(10C – 18C)alkyl;

R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen, $-C(O)(CH_2)_2C(O)OCH_3$, $-C(O)CH=CH_2$,  and

 , wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one

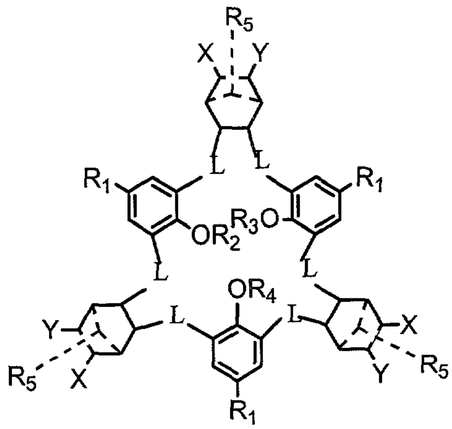
of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, $-CH_2NH-$ and -CH=N-, wherein the oxygen or nitrogen is bonded to either the benzene ring or the cyclohexyl ring.

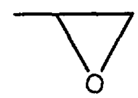
31. The amphiphilic module of claim 30, wherein the nitrogen or oxygen of the L group is bonded to the cyclohexyl ring.

32. The amphiphilic module of claim 30, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the cyclohexyl ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

33. An amphiphilic module, comprising the chemical structure:



wherein:

X and Y are independently hydrogen, , -OC(O)CH=CH$_2$, -NHC(O)CH=CH$_2$, –SH or –NH$_2$;

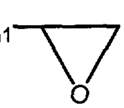
or,

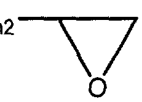
X is –C(O)OH, –C(O)OCH$_3$, -C(O)Cl or another activated acid and Y is –NH$_2$, -OH or -SH;

when X and Y are both hydrogen or –C(O)OCH$_3$, R$_1$ is selected from the group consisting of –CH=CH$_2$, -OC(O)CH=CH$_2$ and –NHC(O)CH=CH$_2$;

when X and Y are both –SH or –NH$_2$ or X is –C(O)OCH$_3$ and Y is –NH$_2$, R$_1$ is hydrogen;

R$_5$ is selected from the group consisting of CH$_2$-(10C –18C)alkyl, -CH=CH-(10C - 18C)alkyl, -C≡C-(10C – 18C)alkyl, -OC(O)-(10C – 18C)alkyl, -C(O)O-(10C – 18C)alkyl, -NHC(O)-(10C - 18C)alkyl, -C(O)NH-(10C – 18C)alkyl and –O-(10C – 18C)alkyl;

R$_2$, R$_3$ and R$_4$ are independently selected from the group consisting of hydrogen, –C(O)(CH$_2$)$_2$C(O)OCH$_3$, -CH$_2$C(O)CH=CH$_2$, -(CH$_2$CH$_2$O)$_{n1}$ and

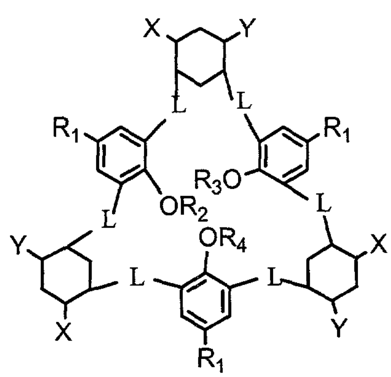
$-(CH_2)_{n2}$ , wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, $-CH_2NH-$ and –CH=N-, wherein the oxygen or nitrogen is bonded to either the benzene ring or the bicyclo[2.2.1]heptane ring.

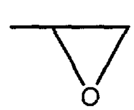
34. The amphiphilic module of claim 33, wherein the nitrogen or oxygen of the L group is is bonded to the bicyclo[2.2.1]heptane ring.

35. The amphiphilic module of claim 33, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the bicyclo[2.2.1]heptane ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

36. An amphiphilic module, comprising the chemical structure:



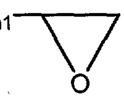
wherein:

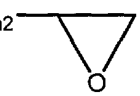
X and Y are independently hydrogen, , $-OC(O)CH=CH_2$, $-NHC(O)CH=CH_2$, –SH or $–NH_2$;

or,

X is –C(O)OH, –C(O)OCH_3, -C(O)Cl or another activated acid and Y is –NH_2, -OH or -SH;

R_1 is selected from the group consisting of -CH_2-(10C –18C)alkyl, -CH=CH-(10C - 18C)alkyl, -C≡C-(10C – 18C)alkyl, -OC(O)-(10C – 18C)alkyl, -C(O)O-(10C – 18C)alkyl, -NHC(O)-(10C - 18C)alkyl, -C(O)NH-(10C – 18C)alkyl and –O-(10C – 18C)alkyl;

R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen, –C(O)$(CH_2)_2$C(O)OCH_3, -C(O)CH=CH_2, -$(CH_2CH_2O)_{n1}$  and

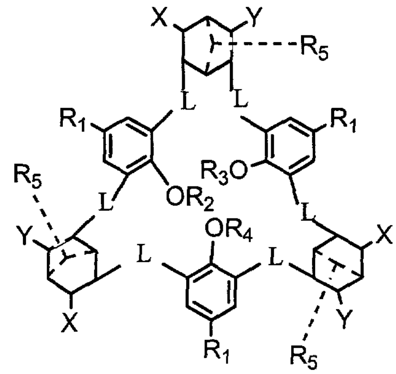
-$(CH_2)_{n2}$  , wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, -CH_2NH- and -CH=N-, wherein the nitrogen or oxygen is bonded to either the benzene ring or the cyclohexyl ring.

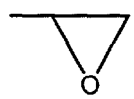
37. The amphiphilic module of claim 36, wherein the nitrogen or oxygen of the L group is bonded to the cyclohexyl ring.

38. The amphiphilic module of claim 36, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the cyclohexyl ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

39. An amphiphilic module, comprising the chemical structure:



wherein:

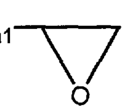
X and Y are independently hydrogen,  , $-OC(O)CH=CH_2$, $-NHC(O)CH=CH_2$, $–SH$ or $–NH_2$;

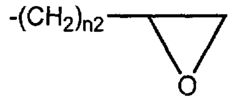
or,

X is $–C(O)OH$, $–C(O)OCH_3$, $-C(O)Cl$ or another activated acid and Y is $–NH_2$, $-OH$ or $-SH$;

when X and Y are both hydrogen or $–C(O)OCH_3$, R_1 is selected from the group consisting of $–CH=CH_2$, $-OC(O)CH=CH_2$ and $–NHC(O)CH=CH_2$;

when X and Y are both $–SH$ or $–NH_2$ or X is $–C(O)OCH_3$ and Y is $–NH_2$, R_1 is hydrogen;

R_5 is selected from the group consisting of CH_2-(10C –18C)alkyl, -CH=CH-(10C - 18C)alkyl, -C≡C-(10C – 18C)alkyl, -OC(O)-(10C – 18C)alkyl, -C(O)O-(10C – 18C)alkyl, -NHC(O)-(10C - 18C)alkyl, -C(O)NH-(10C – 18C)alkyl and –O-(10C – 18C)alkyl;
R_2, R_3 and R_4 are independently selected from the group consisting of hydrogen, $–C(O)(CH_2)_2C(O)OCH_3$, $-C(O)CH=CH_2$, $-(CH_2CH_2O)_{n1}$ and

, wherein n1 is 1 - 50 and n2 is 1 - 4, provided that at least one of R_2, R_3 or R_4 must be other than hydrogen; and,

L is selected from the group consisting of –C(O)O-, –C(O)NH-, -CH_2NH- and –CH=N-, wherein the oxygen or nitrogen is bonded to either the benzene ring or the bicyclo[2.2.1]heptane ring.

40. The amphiphilic module of claim 39, wherein the nitrogen or oxygen of the L group is bonded to the bicyclo[2.2.1]heptane ring.

41. The amphiphilic module of claim 39, wherein the nitrogen or oxygen of the L group alternates, that is, if a nitrogen or oxygen of an L group is bonded to the cyclohexyl ring, the nitrogen or oxygen of the next L group going around the ring is bonded to the benzene ring.

42. A method of synthesizing an amphiphilic module of any one of claims 1, 17, 20, 23, 30, 33, 36 or 39, comprising:

providing a plurality of first synthons comprising two functional groups that may be the same or different;

providing a plurality of second synthons, which are different than the first synthons, comprising two functional groups that may be the same or different;

wherein the functional groups of the first synthons can only react with the functional groups of the second synthons;

contacting the first and second synthons in a solvent; and,

isolating the amphiphilic module.

43. The method of claim 42, further comprising a reagent or reagents that catalyzes the reaction of the functional groups of the first synthon with the functional groups of the second synthon.

44. A method for synthesizing an amphiphilic module of any one of claims 1, 17, 20, 23, 30, 33, 36 or 39, comprising:

placing a first synthon comprising a functional group in a solvent;

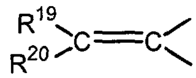
adding a second synthon comprising a functional group that reacts with the functional group of the first synthon to form a dimer;

adding a third synthon, which may be the same as, or different from, the first synthon and which comprises a functional group that reacts with a second functional group of the second synthon to form a trimer;

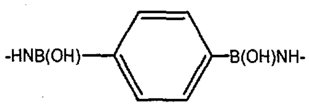
repeating the above steps until an n^{th} synthon is added, the n^{th} synthon comprising a functional group that reacts with a second functional group of the first synthon to form a ring, wherein n is 1 - 24.

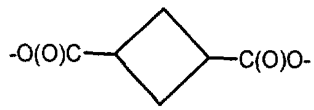
45. The method of claim 44, wherein a reagent or reagents is added to catalyze the reaction of a functional group of a synthon with a functional group of the next synthon being added or which itself reacts with a functional group of a synthon to form an intermediate which then reacts with a functional group of the next synthon being added to form a bond.

46. A two-dimensional array, comprising a plurality of amphiphilic modules wherein each module is bonded to one or more adjacent modules by one or more connectors between each pair of adjacent modules.

47. The two-dimensional array of claim 46, wherein the each connector is independently selected from the group consisting of -O-, -S-, $-NR^{19}-$, -SS-, $-(CR^{19}R^{20})_m-$, -CH(OH)-, $-C(OH)R^{19}-CH_2NR^{20}-$, $-C(OH)CH(NHR^{19})-$, $-CR^{19}=CR^{20}-$, -C≡C-, -C(O)O-, -C(O)S-, -OC(O)O-, $C(O)NR^{19}-$, $-CR^{19}=N-$, $-CR^{19}=NNH-$, -NHC(O)O-, $-NHC(O)NR^{19}-$, $-NHCH_2NH-$, $-NHC(NH)CH_2C(NH)NH-$, $-CH(OH)CH_2(CO_2R^{19})-$, $-CH=CR^{19}C(O)-$, -C≡C-C≡C-, $-C(CHR^{19}R^{20})S-$, 

, $-C(CH(CH_3)_2)Si(CH_3)_2-$, $-C(O)CH_2(CO_2R^{19})-$,



, 

and,

an acrylate copolymer formed by reaction of a $-OC(O)CH=CH_2$ group on each module and ethyl acrylate,

wherein R^{19} and R^{20} are independently selected from the group consisting of hydrogen, (1C – 4C)alkyl and a group that confers a selected chemical or physical characteristic, or a combination thereof.

48. The two-dimensional array of claim 47, wherein the connector is separated from one or both of the modules bonded by the connector by a spacer.

49. The two-dimensional array of claim 48, wherein the spacer comprises a $-(CH_2)_n-$ group, wherein n is 1 – 28.